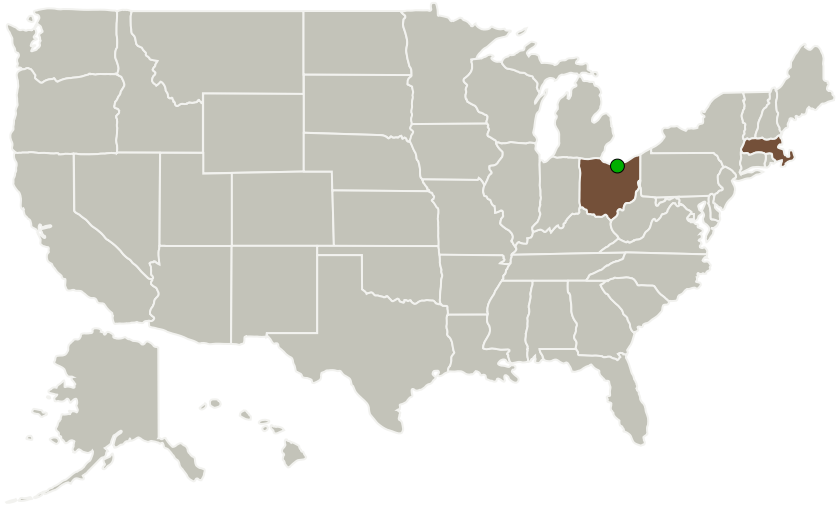
Mobile Passive MWIR Gas Imager, Phase I

Completed Technology Project (2015 - 2015)

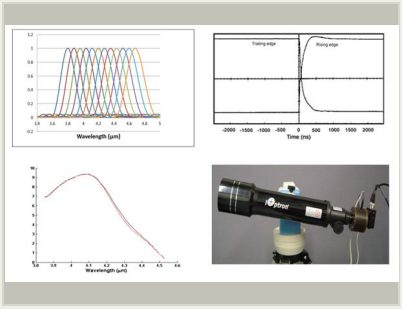
Project Introduction

In this SBIR project Boston Applied Technologies, Inc. (BATi) proposes a unique optical imager for remote gas sensing. Tunable filters based on electro-optic effect have shown great potential in detecting gas concentration through obtaining its absorption spectrum. The core of the proposed imager is a high speed electro-optic tunable filter based on patented OptoCeramic® material developed by BATi. This compact passive imager covers a large portion of mid-wave infrared. An innovative technical approach is proposed to achieve narrow bandwidth at the same time. The successful combination of wide tuning range and sharp passing bands makes the image have excellent ability of detecting critical gas species such as carbon dioxide, carbon monoxide, methane and water vapor simultaneously at high precision. The imager also features high speed, big aperture, large angle of view, robust, light weight, and low cost.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Boston Applied Technologies, Inc.	Lead Organization	Industry Minority-Owned Business	Woburn, Massachusetts
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



Mobile Passive MWIR Gas Imager, Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

Mobile Passive MWIR Gas Imager, Phase I

Completed Technology Project (2015 - 2015)

Primary U.S. Work Locations	
Massachusetts	Ohio

Project Transitions

June 2015: Project Start

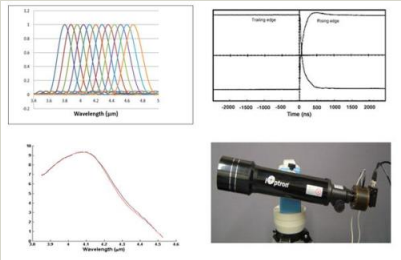
December 2015: Closed out

Closeout Summary: Mobile Passive MWIR Gas Imager, Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/139248)*

Images



Briefing Chart Image
Mobile Passive MWIR Gas Imager, Phase I
(https://techport.nasa.gov/image/130472)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Boston Applied Technologies, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

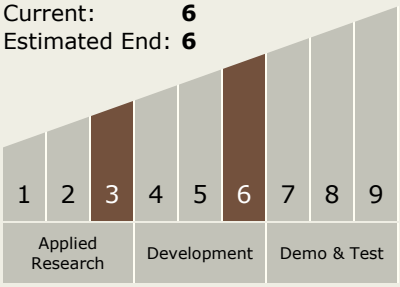
Carlos Torrez

Principal Investigator:

Qizhi Zhang

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



Mobile Passive MWIR Gas Imager, Phase I

Completed Technology Project (2015 - 2015)

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.4 Environment Sensors

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System